

Vowel Variation in Manchester: a Dynamic Approach

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*A Comparative Study of Language Change in
Northern Englishes (2008-13)*

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1. Introduction

Focus

GOOSE and GOAT fronting in Manchester English



1. Introduction

GOOSE/GOAT fronting in progress in UK dialects

GOOSE		GOAT	
RP	Henton 1983, Bauer 1985, Hawkins & Midgley 2005	RP	Gimson 1970, Wells 1982, Trudgill 2001
Milton Keynes	Kerswill & Williams 2005	Hull	Kerswill & Williams 1999
Nottingham	Flynn 2011	Newcastle	Watt & Milroy 1999
Carlisle	Jansen 2010	Bradford	Watt & Tillotson 2001

1. Introduction

GOOSE/GOAT fronting in progress in US dialects

GOOSE		GOAT	
Philadelphia	Labov 1994	Memphis	Fridland 1999
Charleston	Baranowski 2008	<i>various</i>	Thomas 2001
San Francisco	Hall-Lew 2009	Arizona	Hall-Lew 2004
Houston	Koops 2010	Charleston	Baranowski 2008

1. Introduction

Social conditioning

- predominantly young speakers (changes in progress)
- led by women → at least for GOAT
 - Hall-Lew (2004), Baranowski (2008), Watt & Tillotson (2001)
- possibly diffusion from southeast
 - fronting as typical feature of S.E. British English (K&W 2005)
 - long time depth of GOOSE fronting in the south (esp. London)
(Ellis 1889, Gordon et al 2004)

1. Introduction

GOAT/GOOSE fronting as a unified phenomenon

- Labov: /ow/ fronting parasitic on /uw/ fronting
 - GOOSE fronting typically precedes GOAT fronting and is farther advanced (Labov 1994:208)
 - BUT Watt (2000) found GOAT fronting in the absence of GOOSE fronting → Is this a pattern which is consistent across the north?

1. Introduction

Phonetic & phonological conditioning

- most fronting with preceding /j/
- least fronting with following /l/
- **GOOSE**
 - US: fronting mainly in nucleus (Koops 2010)
 - UK: fronting of whole vowel (Milton Keynes, K&W 2005)
- **GOAT**
 - fronting mainly in offglide (Milton Keynes, K&W 2005)

1. Introduction

Research Questions

- i. to what extent are fronting of GOOSE and GOAT present in Manchester?
- ii. to what extent is GOAT fronting dependent on GOOSE fronting (as proposed by Labov's chain shift model)?
- iii. what are the social correlates of fronting and are there differences between social groups with regard to phonetic implementation?
- iv. are there regionally-defined articulatory strategies in the implementation of fronting in Manchester?
- v. what are the benefits of a multiple-formant approach in characterising formant trajectories?

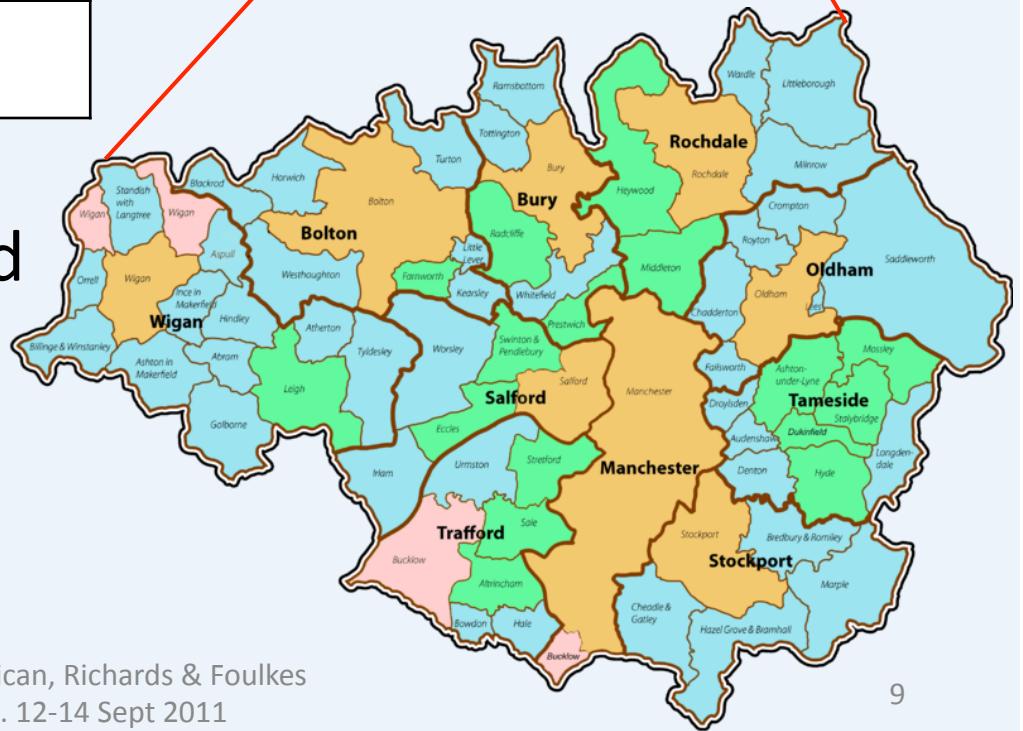
2. Data and Method

Speakers

	Women	Men
Younger (18-24)	5	5
Older (50-68)	3	5



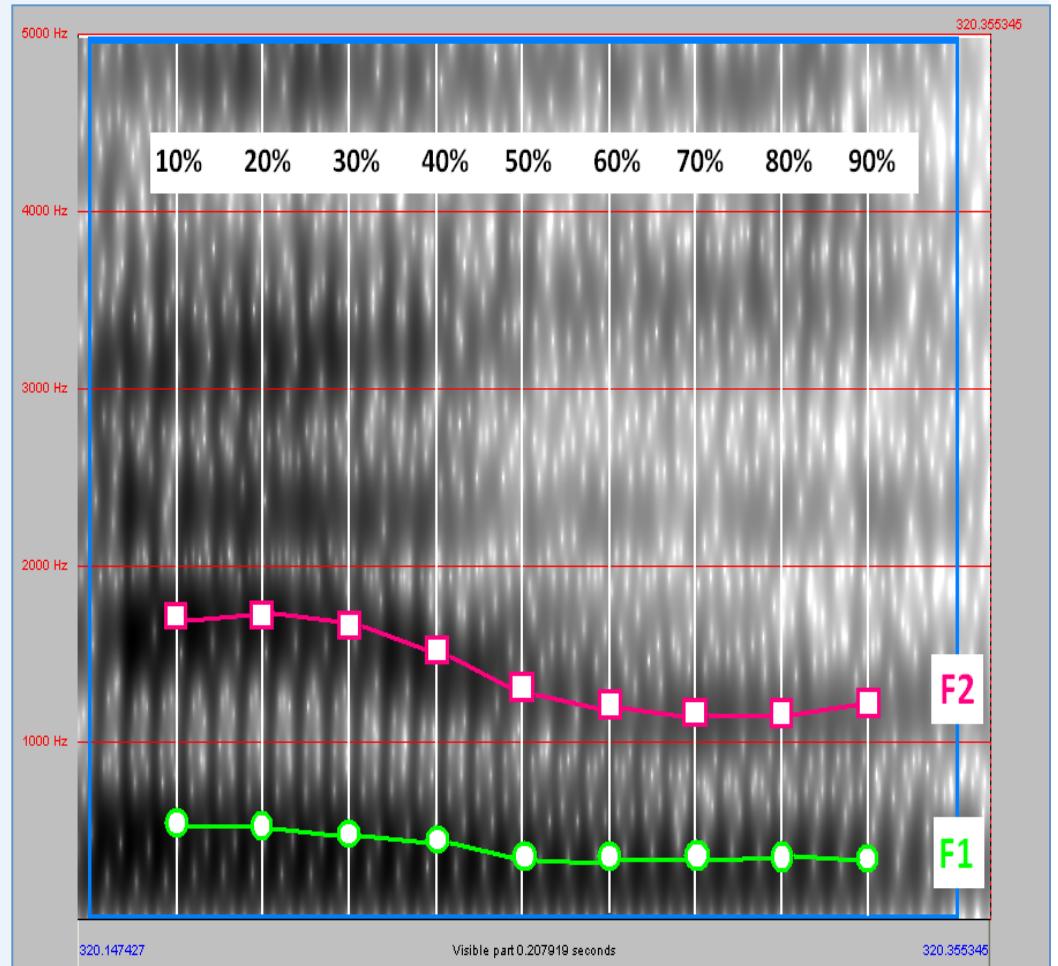
- from Salford or Trafford borough



2. Data and Method

Data

- ~200 item wordlist
 - 8 tokens of GOOSE
 - 15 tokens of GOAT
- vowel delimited on Praat text grid
- 9 time-normalised F1 and F2 measurements extracted via script
(McDougall 2004, 2005, 2006)



'boot' (older male)

2. Data and Method

Dynamic formant measurements

- 9 measurements per formant
- accounts for overall shape of formant trajectories
- commonly used in forensic phonetics
(Eriksson et al 2004; Greisbach et al 1995; Ingram et al 1996; Morrison 2008)
- increasingly used in variationist studies
(Hyunju et al 2010; Koops 2010; Simonet et al 2008)

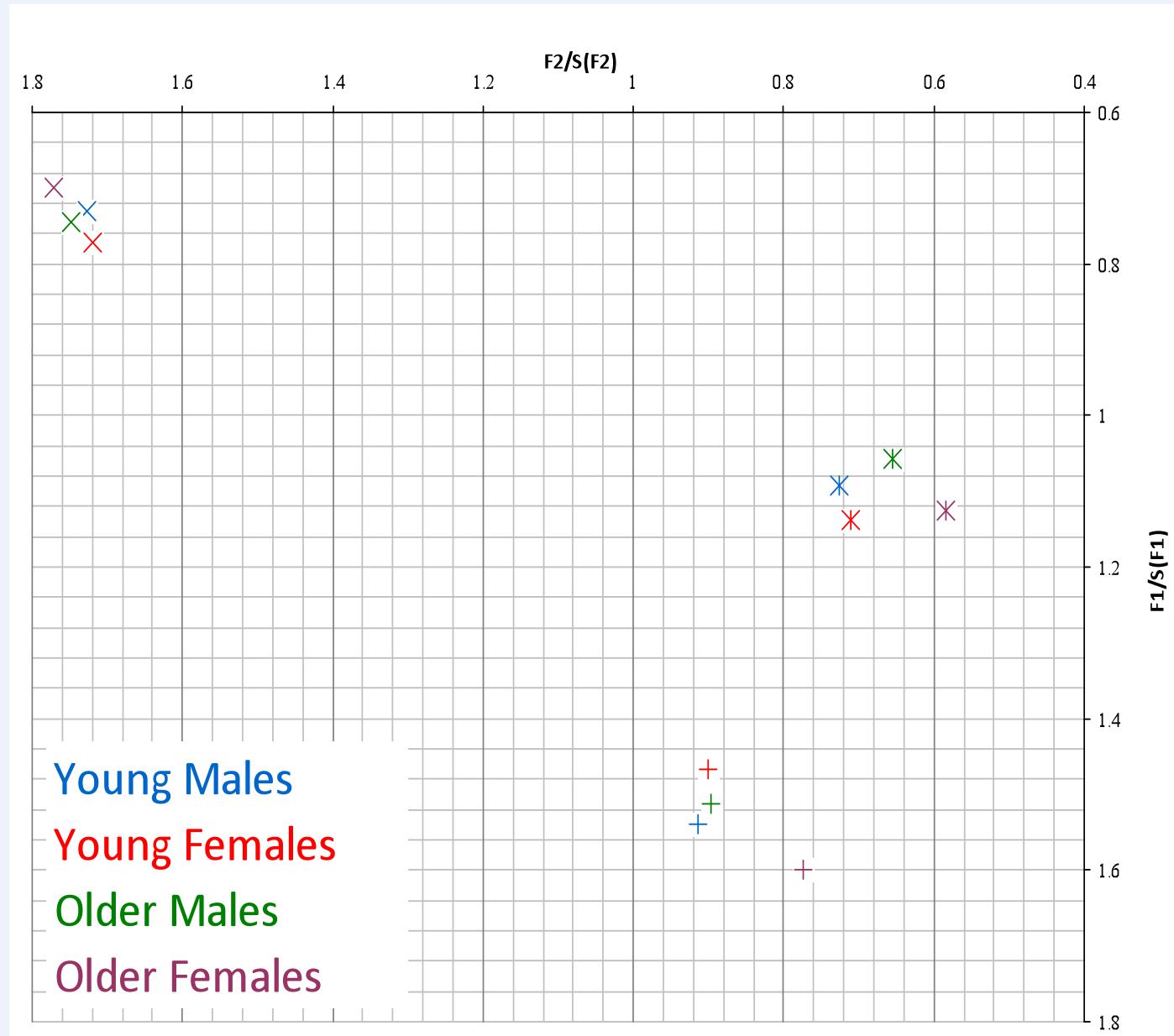
2. Data and Method

- static reference vowels (F1/F2 @ midpoint)
FLEECE, START, THOUGHT (5 tokens per speaker)
- values normalised using modified Watt and Fabricius (2009) method
- comparison with dynamic GOOSE and GOAT data from York (Haddican et al 2010)

3. Results

Normalised means

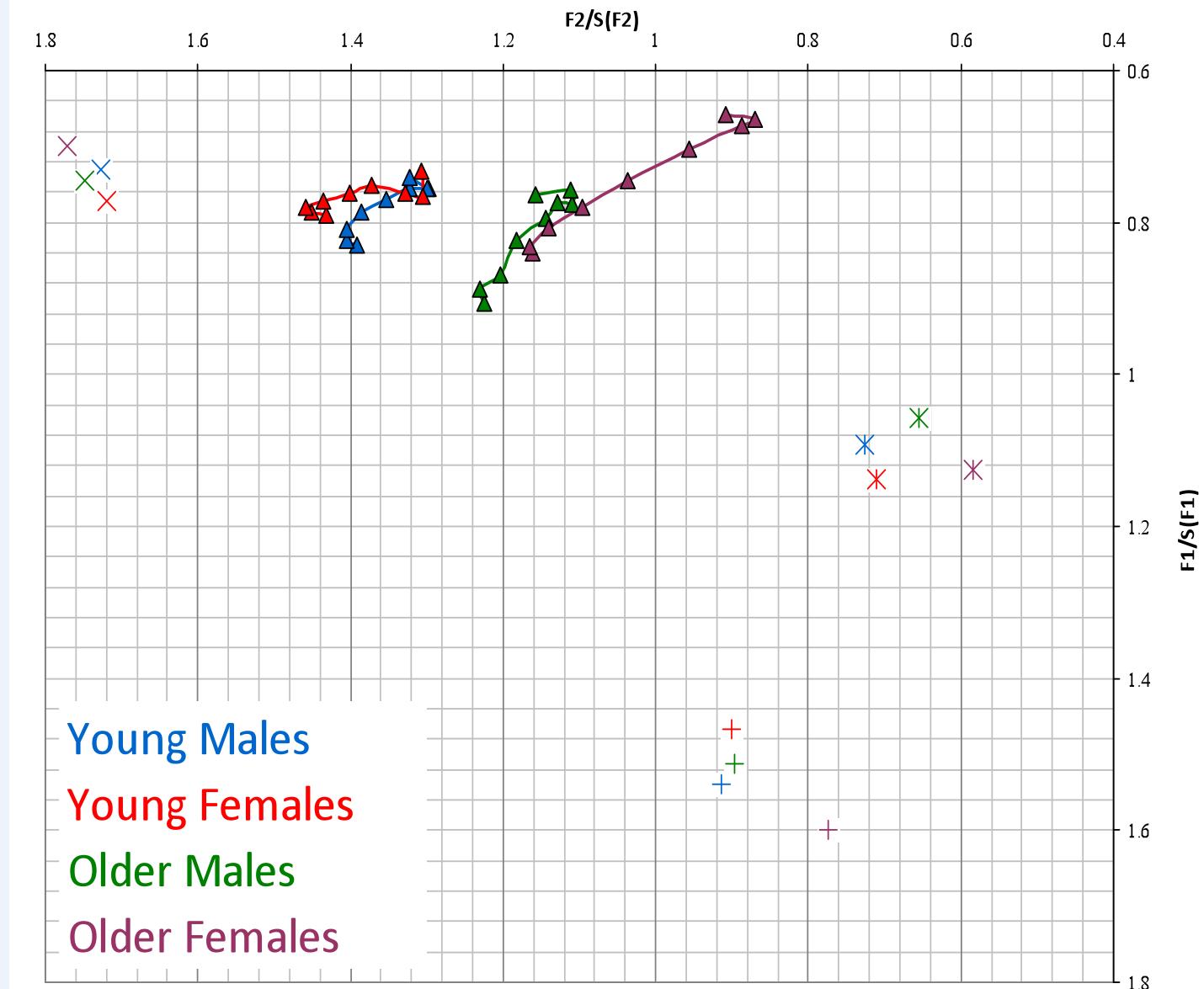
- ✖ FLEECE
- + START
- * THOUGHT



3. Results

Normalised means

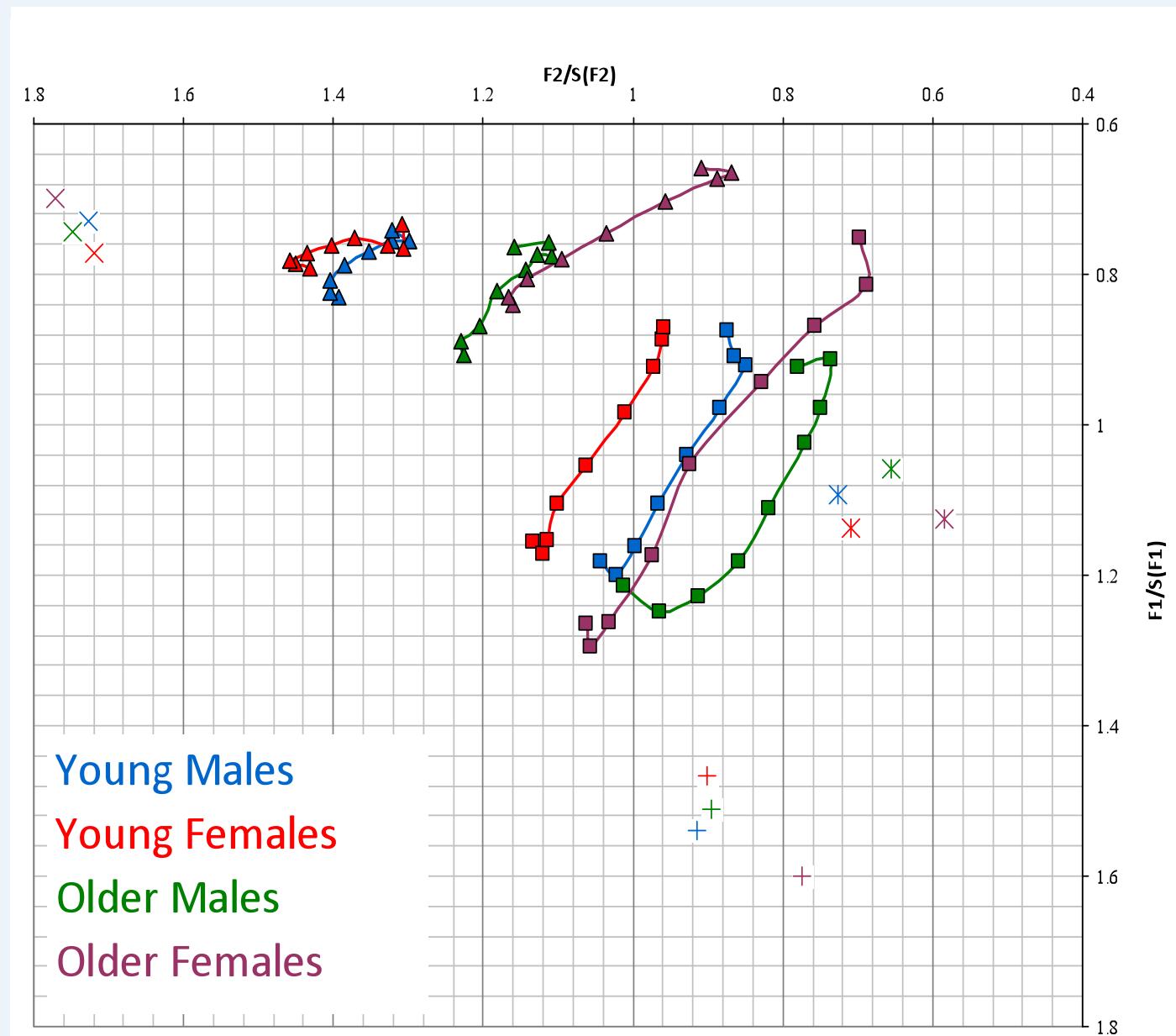
- ▲ GOOSE
- ✖ FLEECE
- + START
- * THOUGHT



3. Results

Normalised means

- GOAT
- ▲— GOOSE
- × FLEECE
- + START
- * THOUGHT



3. Results

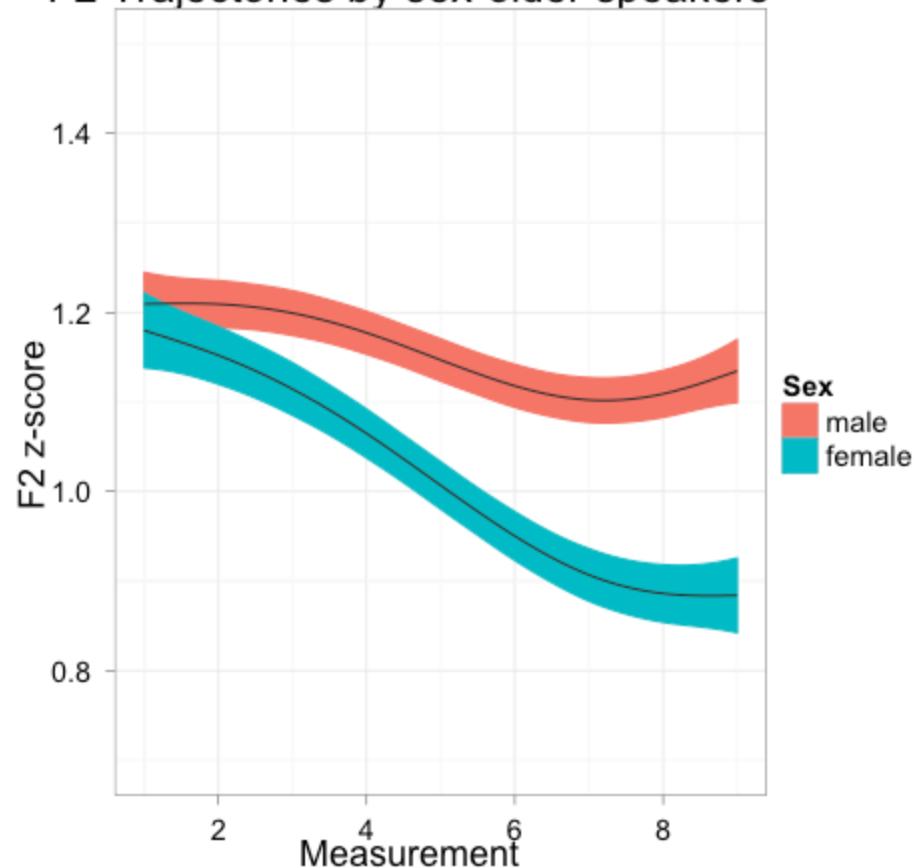
Smoothing Spline ANOVAs

- identifies significant differences between curves in this case focus on F2 (defining fronting)
- 95% Bayesian confidence intervals
lack of overlap = significant difference
- ANOVA analyses smoothing parameters
Nycz & De Decker (2006), Davidson (2006)
- *ssanova* function from *gss* package used in R
following Fruehwald (2010)

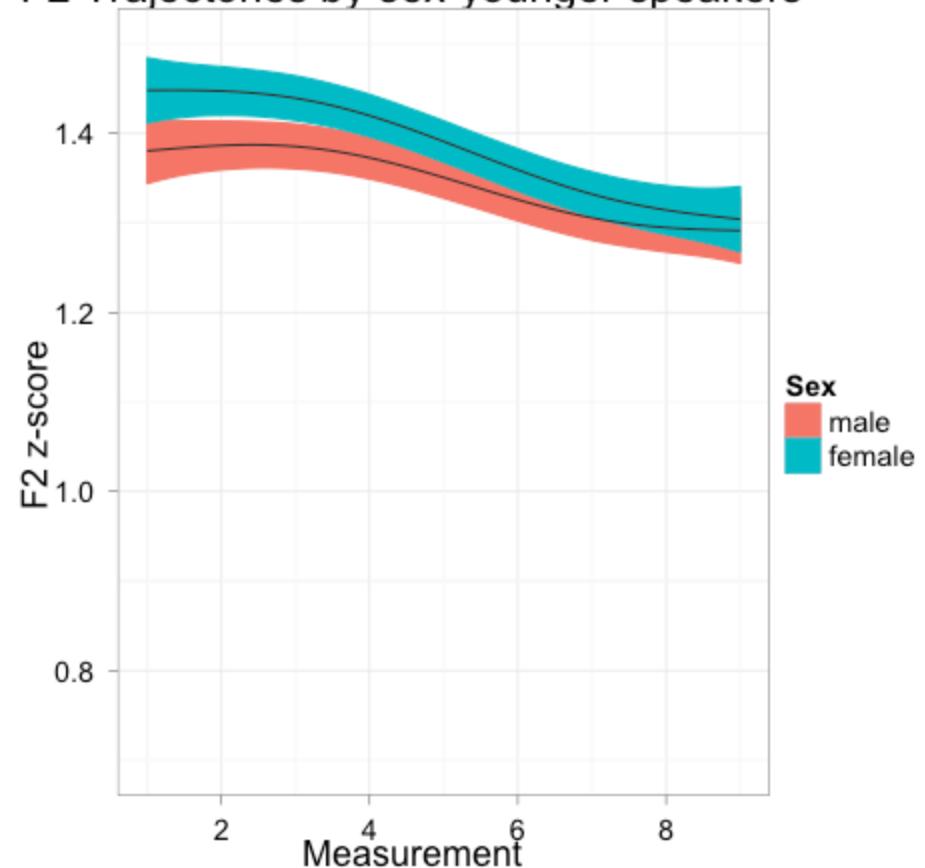
3. Results

GOOSE

F2 Trajectories by sex-older speakers



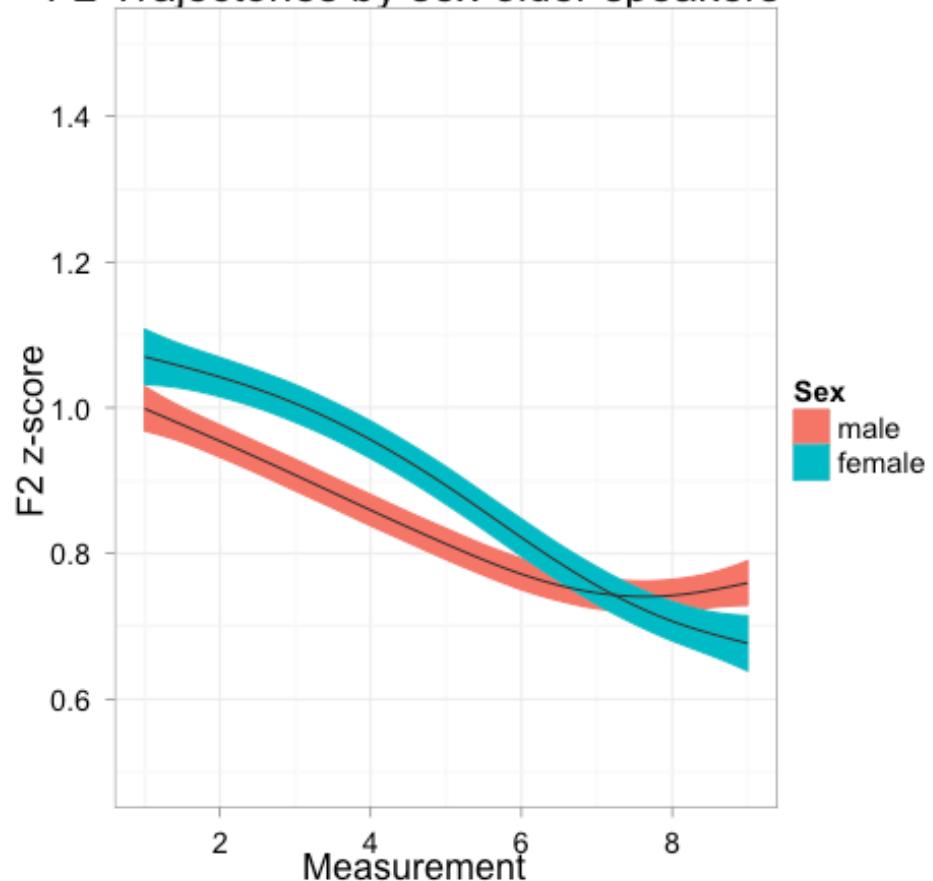
F2 Trajectories by sex-younger speakers



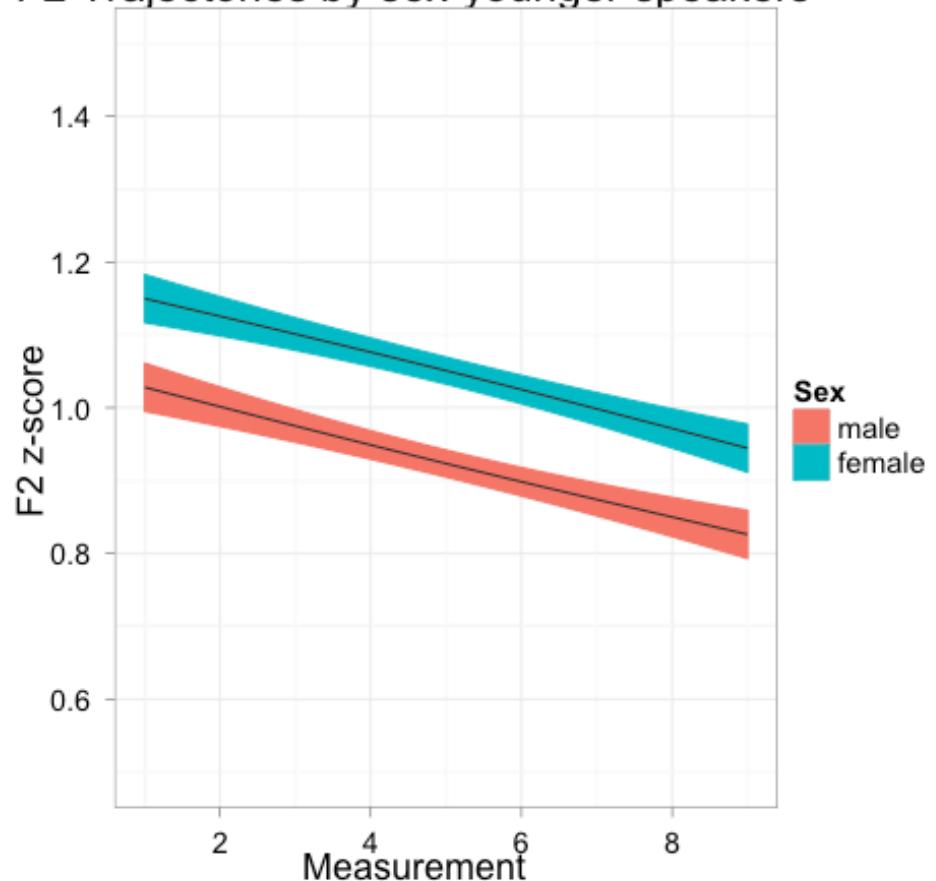
3. Results

GOAT

F2 Trajectories by sex-older speakers



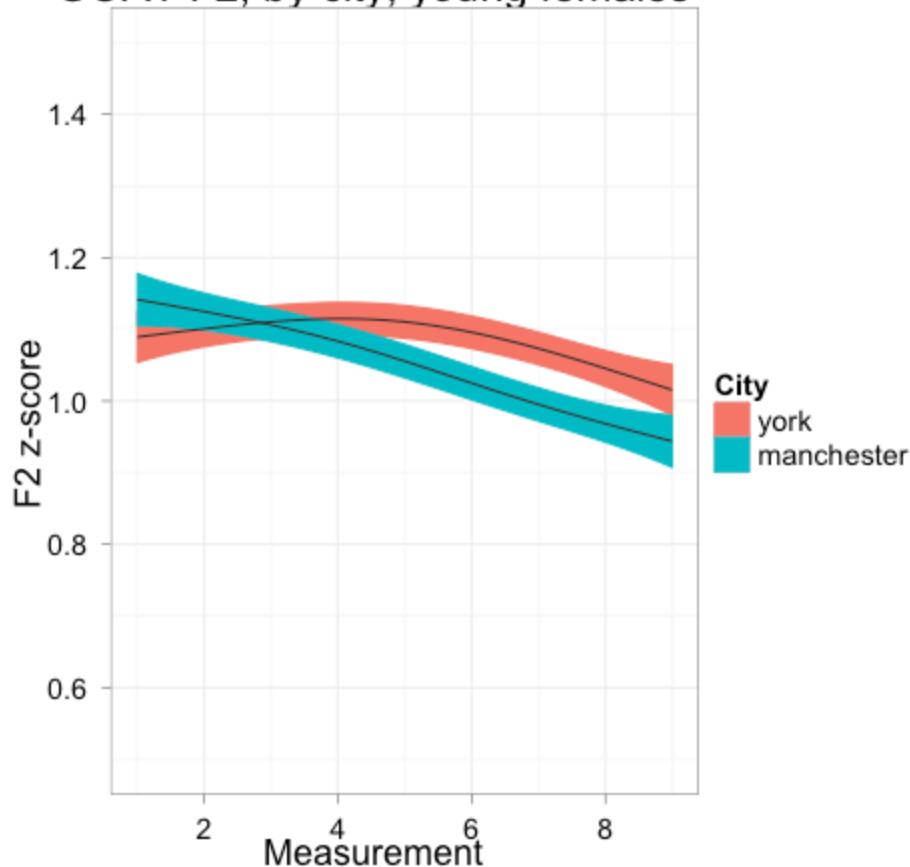
F2 Trajectories by sex-younger speakers



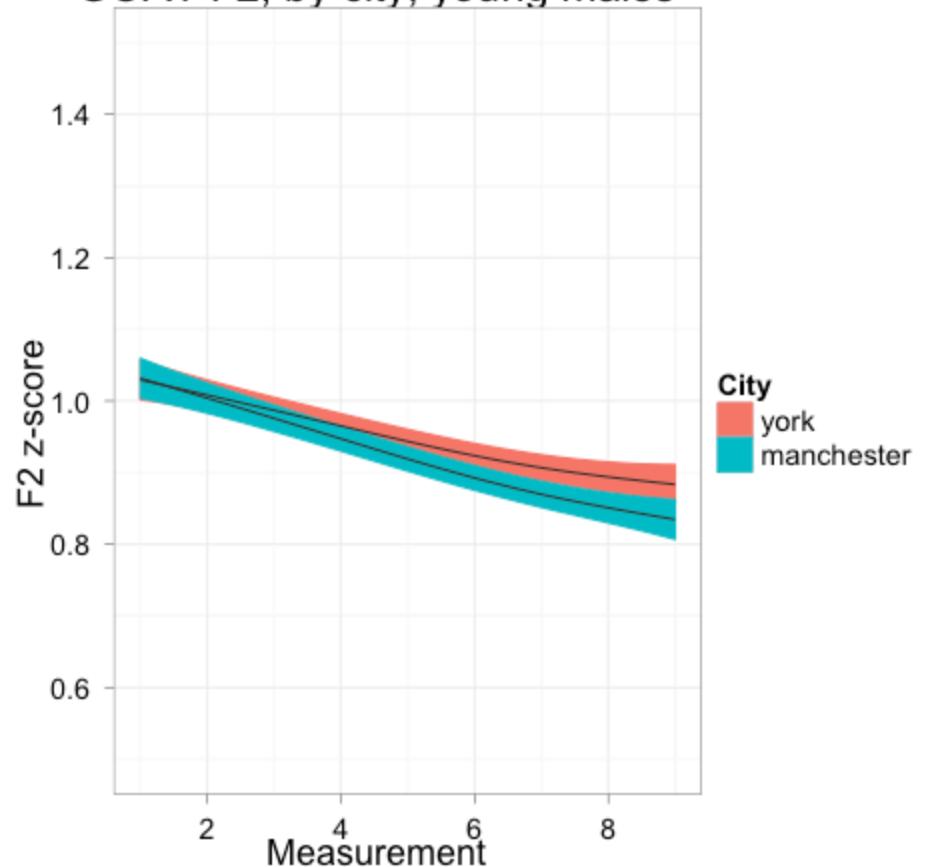
3. Results

GOAT: Comparison with York

GOAT F2, by city, young females

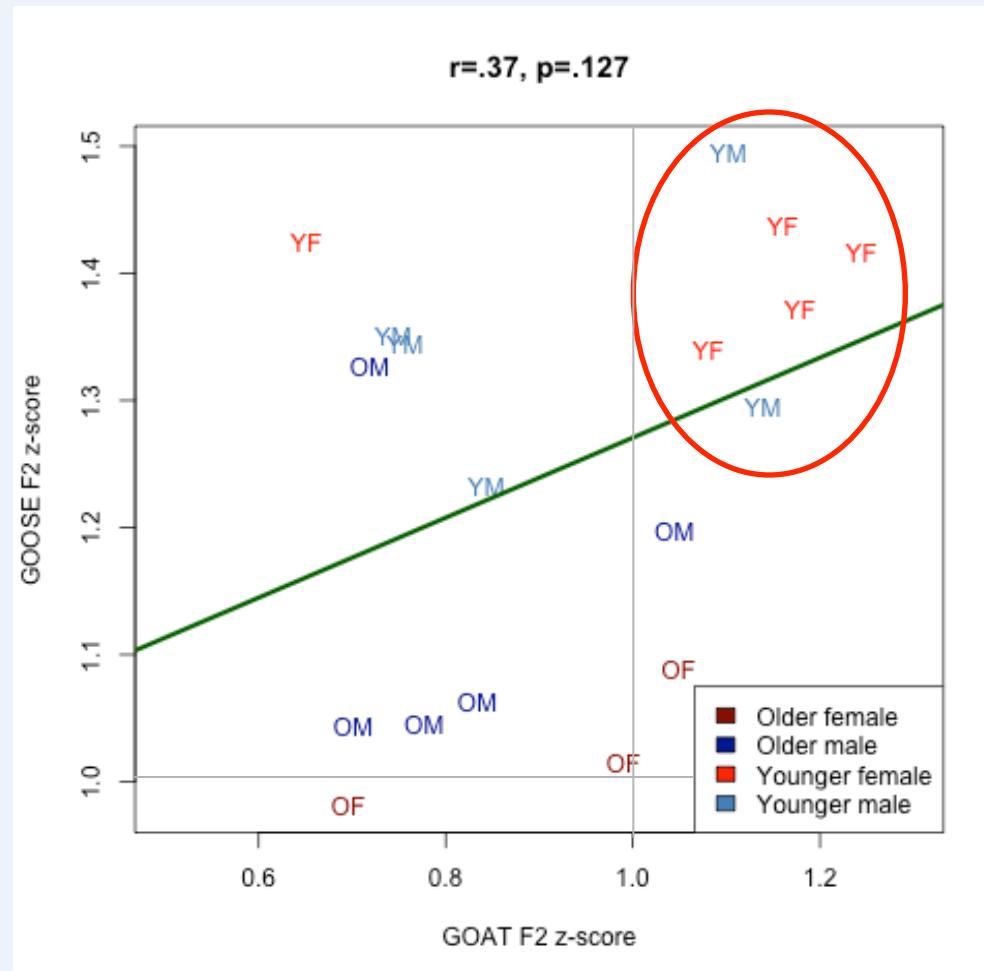


GOAT F2, by city, young males



3. Results

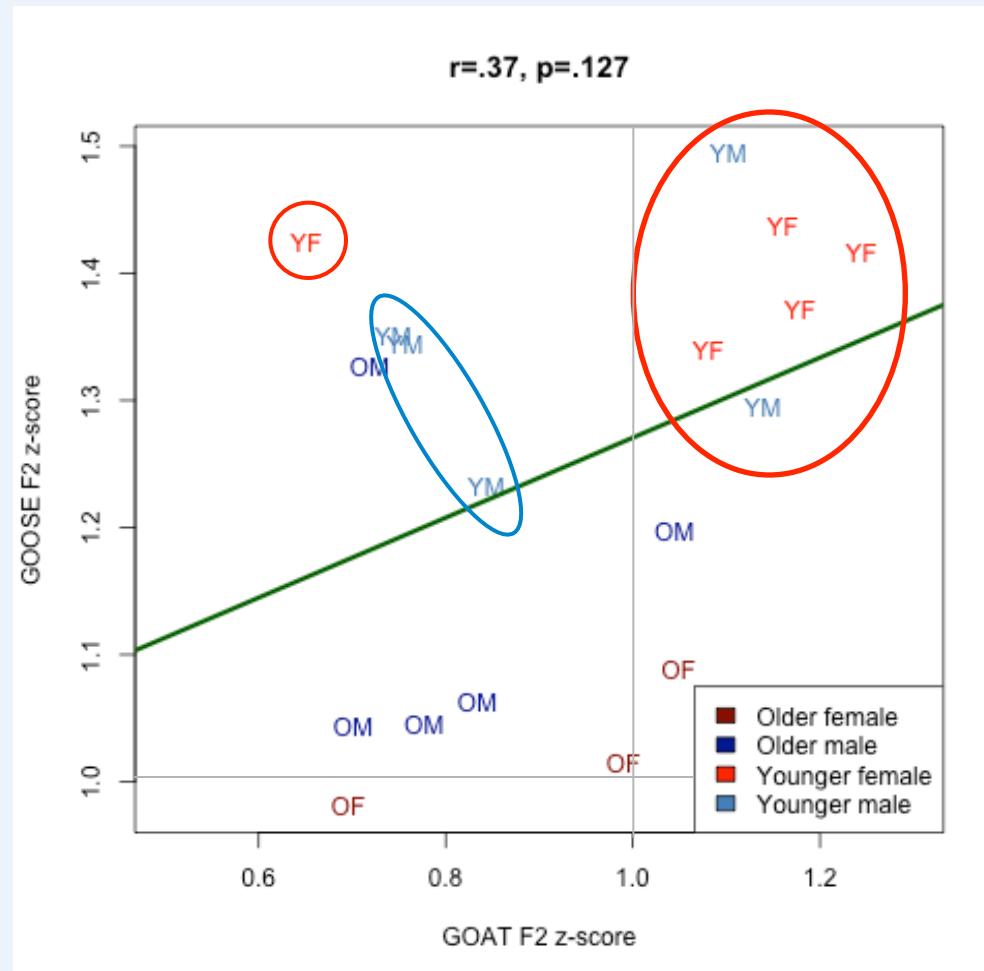
Correlation between GOOSE and GOAT?



3. Results

Correlation between GOOSE and GOAT?

Individual differences...



4. Discussion

- some findings consistent with previous studies...

GOOSE

- clear correlation with age (young > older)
- No significant sex effects

GOAT

- correlated with age (young > older)
- and sex (females > males) (cf. Watt and Tillotson 2001)

4. Discussion

“Principle III: In chain shifts, back vowels move to the front” (Labov, 1994: 116)

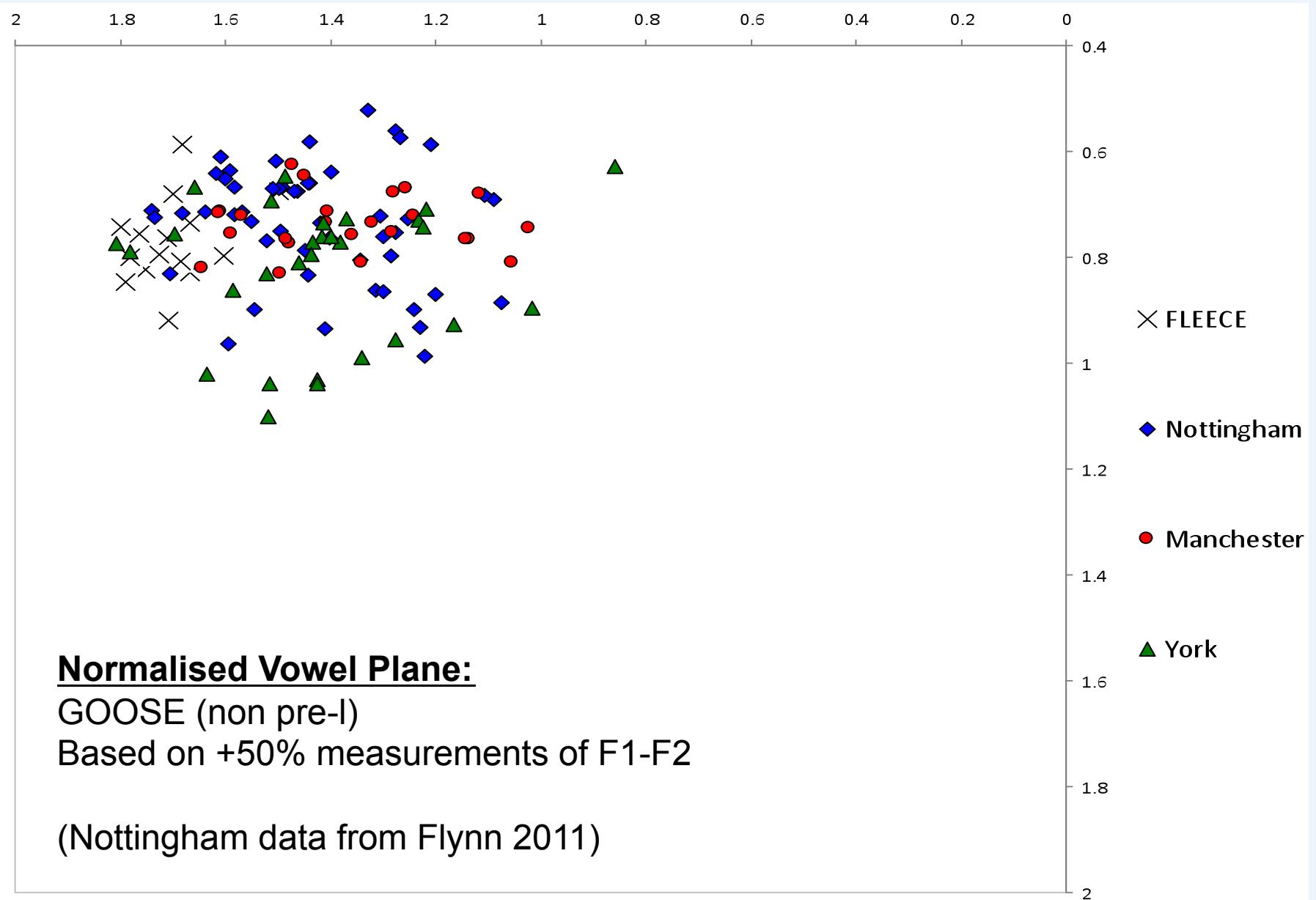
- inherent property of back vowels
- acoustic evidence from Manchester suggests this is the case (for both GOOSE and GOAT)
 - GOOSE fronting to a greater degree
 - GOAT dependent on GOOSE fronting (not vice-versa)
- “high articulatory cost” (Harrington et al 2011)
 - larger change in tongue dorsum position for truly back vowels in CV transitions (minimised by fronting)

4. Discussion

SOCIAL FACTORS:

- geographical diffusion? (Kerswill 2003)
 - predict cities further south to display greater degree of fronting than in the north
 - more advanced process of sound change
 - comparison of Manchester/ York/ Nottingham (Flynn 2011)

BUT no evidence of northward spread of fronting on this basis...



4. Discussion

SOCIAL FACTORS:

- Sound change led by women (Labov 1994): why does it not seem to happen in GOOSE?
- Unclear what (if any) sociolinguistic meaning is attached to fronting
 - Lack of indexical value permits change?

BUT:

- Individuals display different degrees of fronting

4. Discussion

PHONETIC FACTORS:

Heterogeneity of GOAT/GOOSE fronting

(Koops 2010, Hall-Lew 2004, 2005, 2009, Baranowski 2008)

- Within-dialect GOAT Variation in Manchester:
 - YF differ from YM primarily in the onset
- Cross-dialectal GOAT variation:
 - YF in Manchester = highest F2 at onset
 - YF in York = highest F2 at midpoint

PLUS: HIGH LEVELS OF WITHIN-SPEAKER VARIATION

4. Discussion

PHONOLOGICAL FACTORS

- fronting isn't inevitable
 - no fronting of GOOSE in pre-/l/ context in three varieties
 - possible social reason for this in Manchester
 - /l/ vocalisation in Nottingham may also prevent pre-/l/ fronting
- lexical competition
 - fronting possible where no potential merger exists
 - **Prediction:** GOOSE fronting restricted by FLEECE competitor/
GOAT fronting restricted by FACE competitor
 - potential homophones in Nottingham (ROLL-ROW/TOLL-TOW)
→ greater fronting non pre-/l/ to avoid perceptual confusion

5. Conclusion

- some support for Labov/Harrington
 - but, given the social, phonetic and phonological complexities there can be no single underlying reason for the patterns of variation displayed
 - considerable variation between-groups/within-speakers not predicted by “back vowels front”
- variation in phonetic implementation suggests auditory-acoustic output more important than articulatory factors

Dynamic method yields a more insightful picture of the phonetic trajectories of variation and change

thanks, cheers, ta

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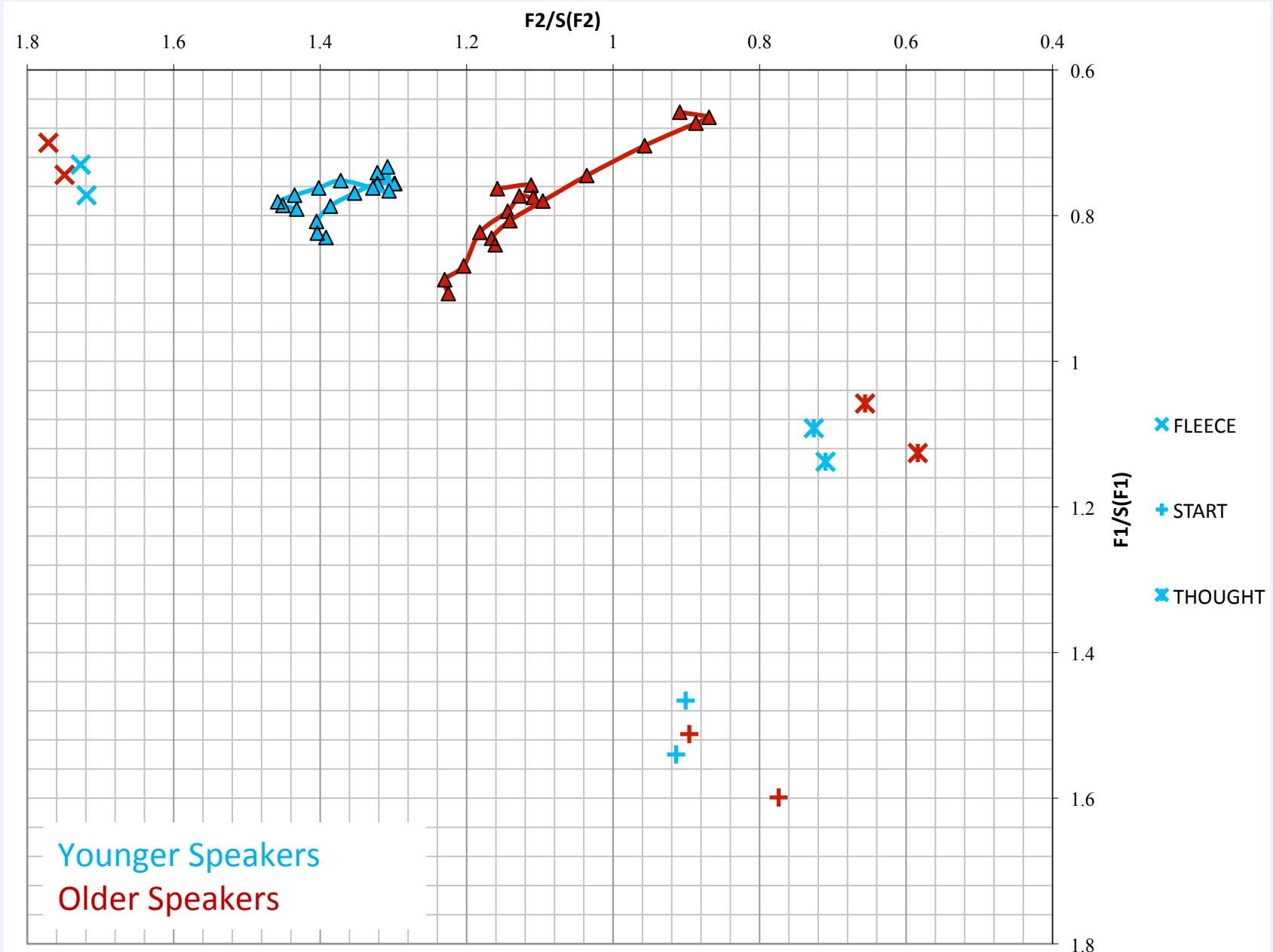
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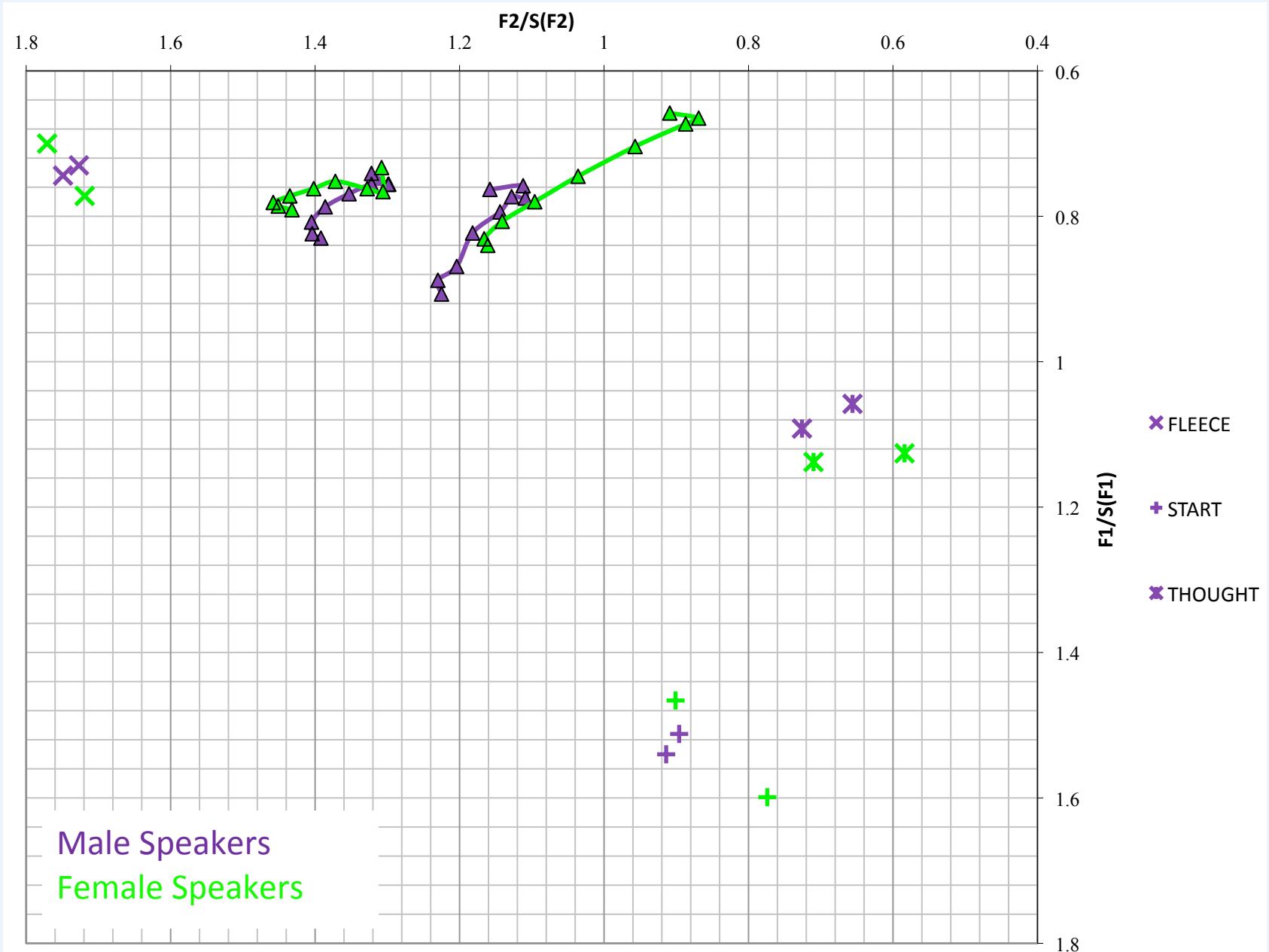
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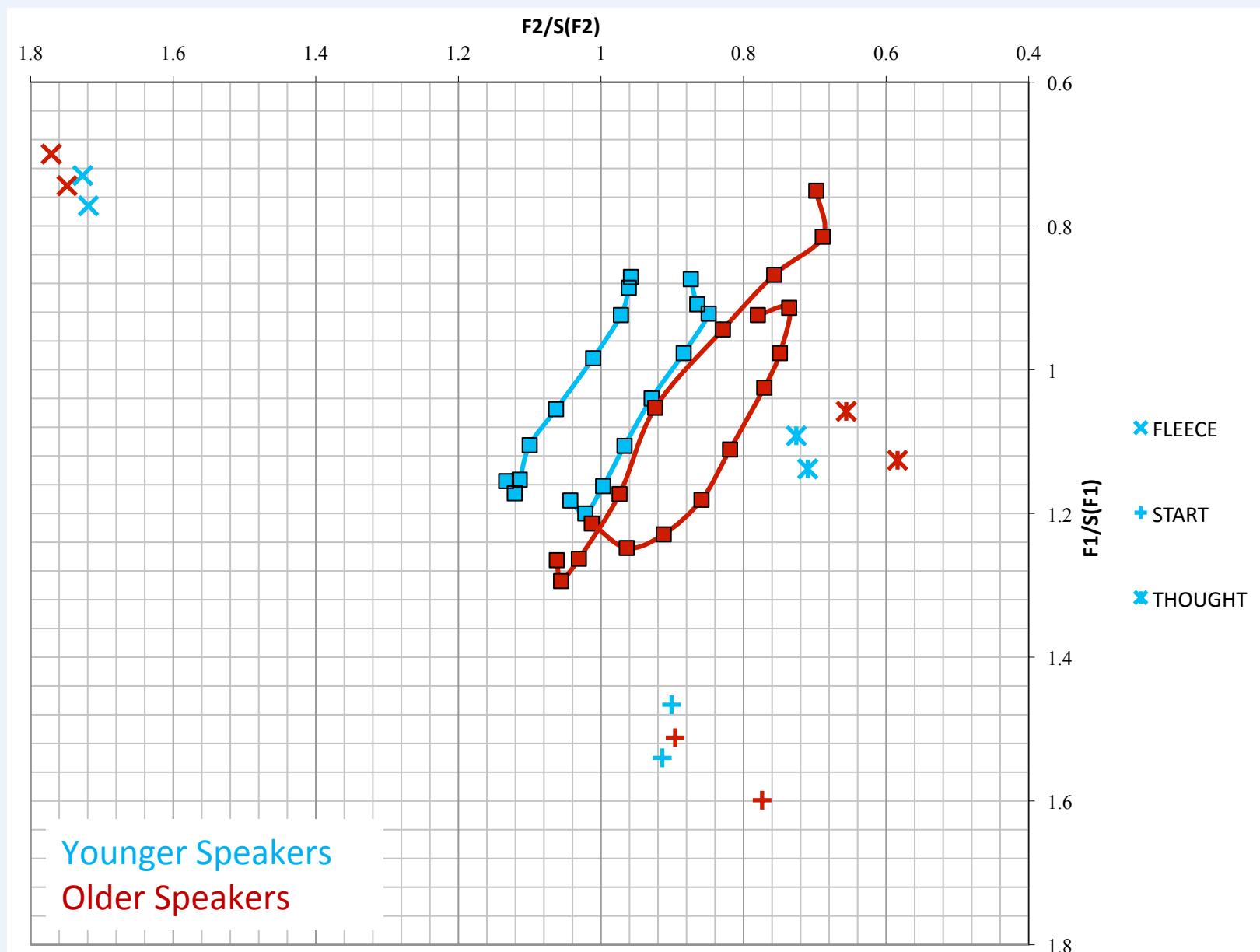
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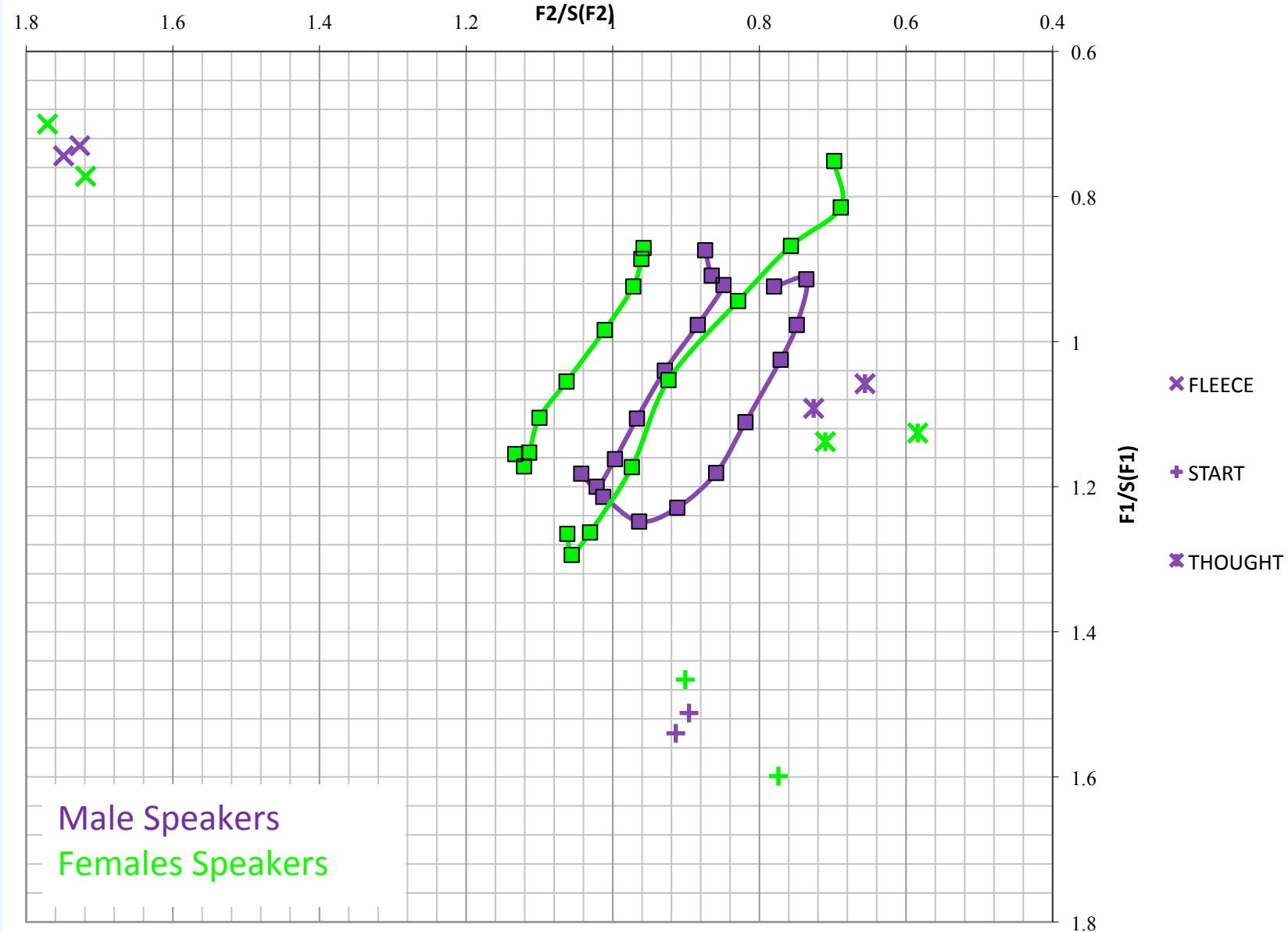
Name	Age	Gender	Education	Occupation
Ally	19 (Y)	M	Student	Student
Anthony	18 (Y)	M	Student	Student
David	19 (Y)	M	Student	Student
Reuben	19 (Y)	M	Student	Student
Rory	19 (Y)	M	Student	Student
Elissa	19 (Y)	F	Student	Student
Jenny	21 (Y)	F	Graduate	Unemployed
Lara	21 (Y)	F	Graduate	Student
Natalie	24 (Y)	F	Age 17	Property supervisor
Niamh	19 (Y)	F	Student	Student

Name	Age	Gender	Education	Occupation
Arnold	68 (O)	M	Higher, national cert. (age 26)	IT Manager (Retired)
Barney	67 (O)	M	Dentistry degree	Dental Surgeon (Retired)
Bruce	54 (O)	M	Age 18	Photographer
Miles	50 (O)	M	Age 16	Floor fitter
Rhys	50 (O)	M	Age 16	Customer service
Marion	62 (O)	F	-	Retired
Shona	52 (O)	F	A-levels	HR
Steph	51 (O)	F	Age 16	Civil Servant





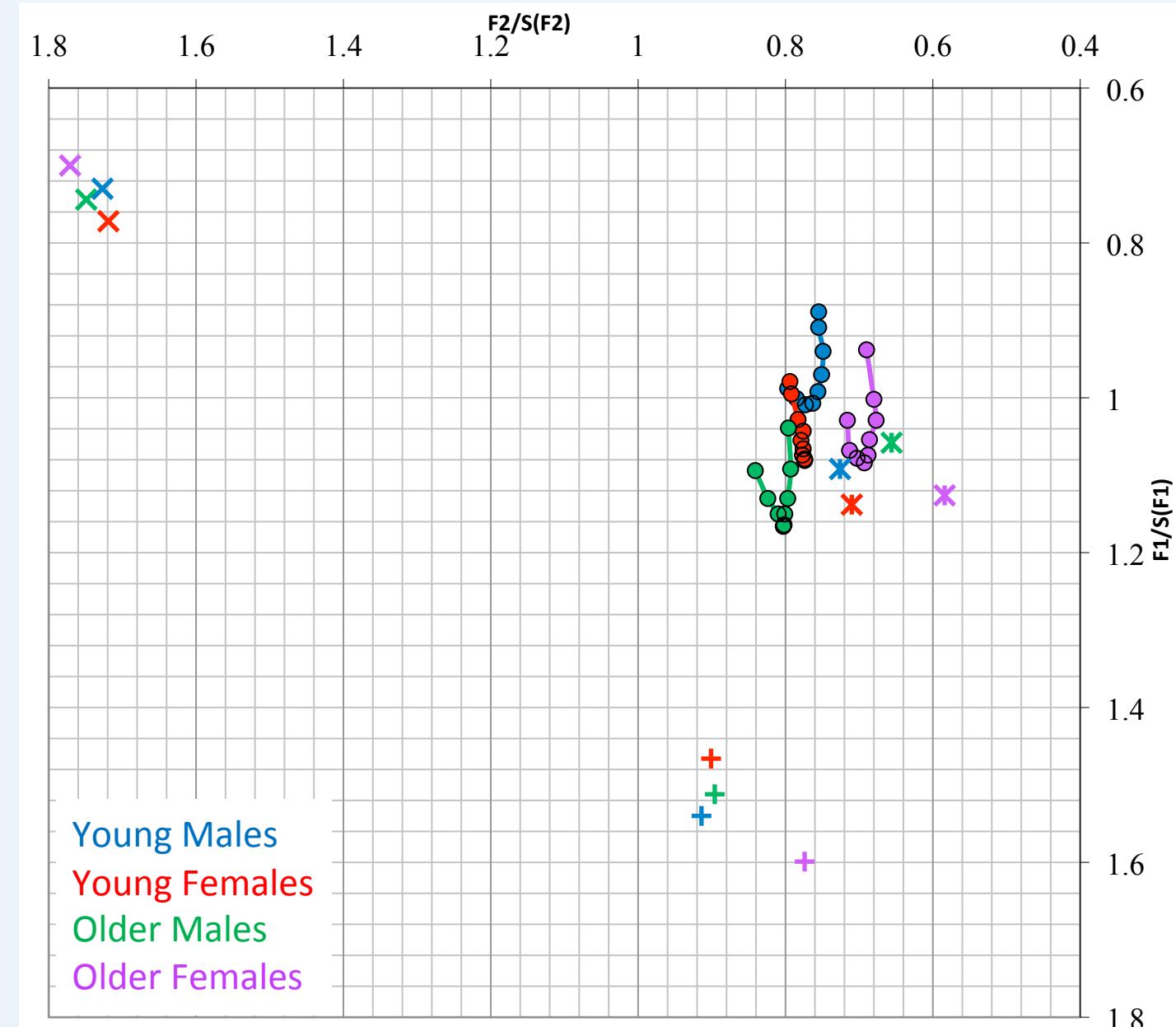




3. Results

Normalised means

- STRUT
- ✖ FLEECE
- + START
- ✖ THOUGHT



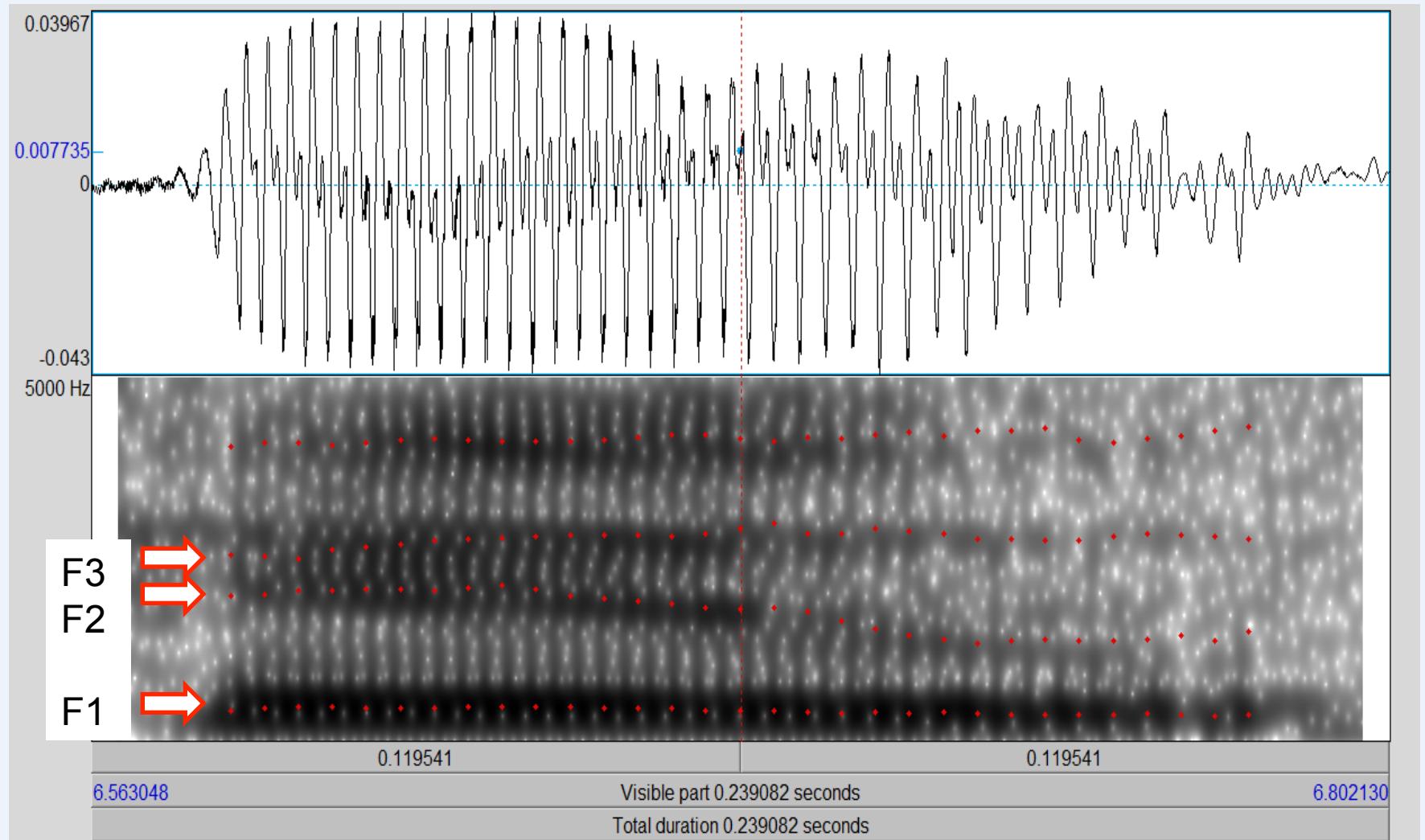
4. Discussion

PHONETIC FACTORS

- Articulatory implementation unclear from F1-F2 alone
- F3 → as an indication of rounding (i.e. higher F3 = less rounding)
 - Visual inspection of spectrograms suggest no marked dip in F3
 - Suggests that tongue body movement is largely responsible for fronting

BUT:

High levels of within-speaker variation

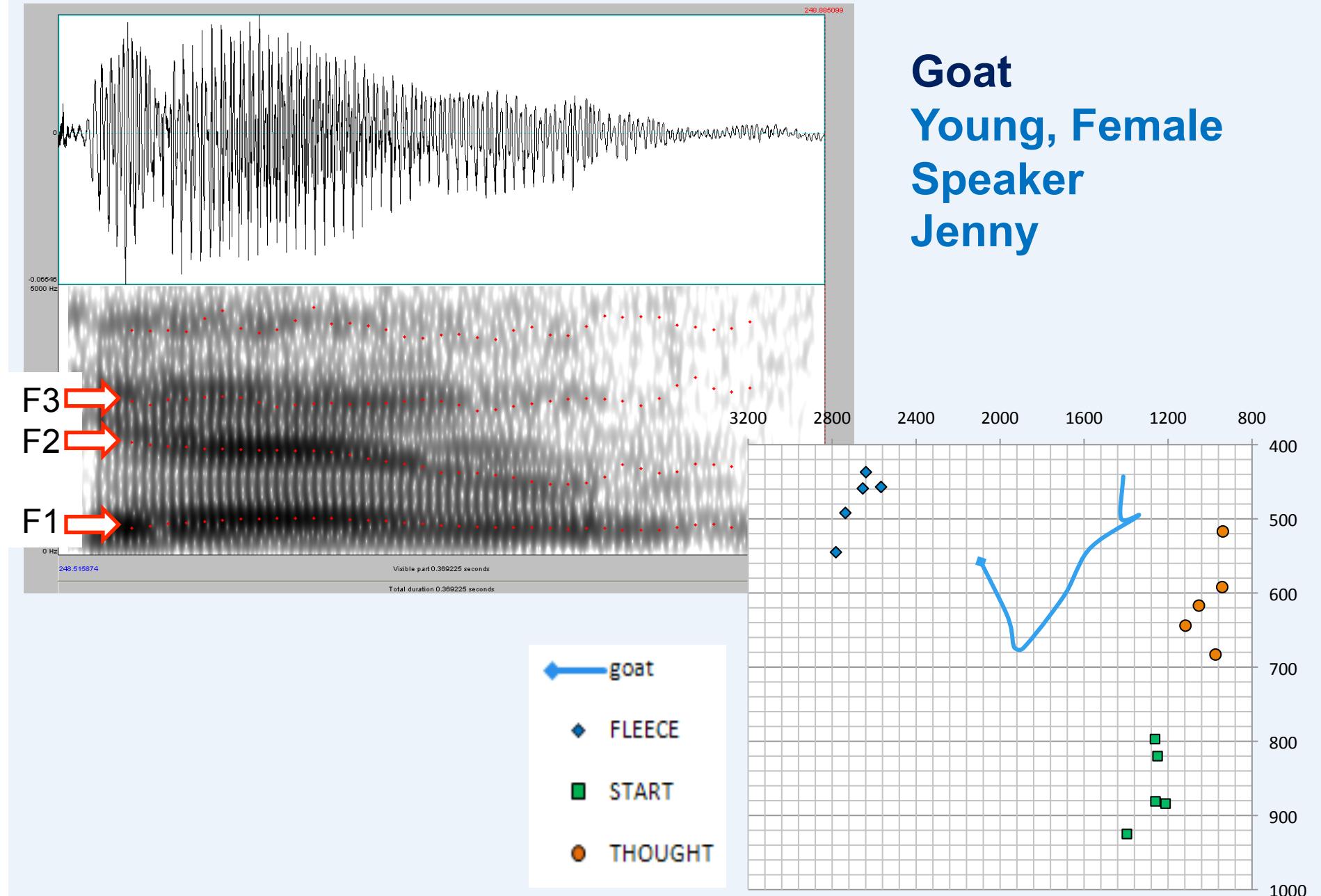


Hoot

Older, Female Speaker

Shona

Goat Young, Female Speaker Jenny



Total Young, Female Speaker Jenny

